

Solomon Modeling TAC Meeting

January 30, 2008

Attendees: USBR-Bill Peck, Jack Wergin, Mark Phillips, Mark Rouse; GMD 4-Wayne Bossert; KWO-Susan Stover; DWR- Jessica Ahlquist, Scott Voss, Tina Alder, Andrew Lyon and Darci Paull; SSPA- Steve Larson, Alex Spiliotopoulos, Marinko Karanovic

SSPA informed the TAC that the North Fork and South Fork Solomon River models are structurally constructed and some calibration is taking place. Time was spent reviewing how the North Fork model overlaps with the RRCA model so that the RRCA output can be input into the North Fork model. Resolution of the model grids was discussed and Steve let the TAC know that the introduced flows are working.

Transmissivity was taken from the RRCA model for areas that overlap with the North Fork model. For the other areas of both models a continuous curve method for soil type was used to determine the transmissivity.

Steve informed the committee about the terrain multiplier factors that are being used to adjust the geographic distribution of recharge to help explain unusual recharge years. Pilot points have also been established that supply the multiplier for hydraulic conductivity from west to east across the models to improve calibration.

SSPA has begun to work on stream flow calibration, with the targets coming from George Austin's baseflow work on the Solomon. PEST was used to formally estimate this parameter and the results so far are that the model is doing a good job of replicating this data. One issue is that the model is having a difficult time predicting the low base flows during the summer months. This issue could be coming from evapotranspiration or from diversions. DWR has information on ET and pheatophytes from a previous KGS study, and will supply this information to SSPA. This is the last structural issue that needs to be addressed before final calibration can be completed.

Individual wells that will be used as calibration targets for water levels were reviewed. Overall the model is doing a good job predicting the trends in water levels, however a little bit of high bias is occurring with the water level measurement residuals. SSPA believes that the terrain multiplier applied over time can help with this problem. Also a few of these wells were being predicted much higher than they were measured, so DWR will check these wells to make sure the data supplied to SSPA is accurate.

How stream conductance was calculated was brought up during the meeting, by USBR. The TAC was informed that the stream conductance does not have a significant effect on ground water discharge, but will be looked at during the calibration phase and some formal parameter estimation may be used to test sensitivity.

Specific yield was also discussed, and it was stated that this parameter would not change much during calibration. SSPA demonstrated how using high and low specific yield examples did not change the result by much, indicating that the specific yield is not sensitive and not the reason for the bias in the water levels.

It was summarized that the remaining issues that need to be resolved are the ET data that could help estimate the low base flow during the summer months, and the use of the terrain multipliers over time to help with the estimation of water levels. If the ET values are too low, then recharge will need to be raised to compensate for the higher ET values entered into the model. SSPA has not yet incorporated the RRCA model drains that flow into the North Fork model as DWR has not yet confirmed they are accurate, but DWR will do so in the next few weeks and let SSPA know their findings.

SSPA provided the slide presentation on their FTP site that can be downloaded by the TAC members.

Action Items:

1. DWR transmit information about RRCA model drains that flow into North Fork model so that data can be incorporated into the North Fork model.
2. SSPA will provide DWR with well numbers and locations to check the accuracy of the water level measurements.
3. DWR will transmit information about ET values related to phreatophyte studies in the Solomon basin.

The next TAC meeting was not scheduled during this meeting, so please be on the lookout for communications from DWR to schedule the next meeting.